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To:

S. MARIO STAVALE

Company

MDRC

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CC:

From:

RICK PASTORE

K/J Job #

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Transmittal as Checked Below



For Your Review

Comments Required By

Comments to



For Your Approval

Approval Required By

Comments to:



For Your Information/As Requested



As Noted

Comments:

Kennedy/Jenks Consultants

Engineers and Scientists

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21 February 1996

Mr. S. Mario Stavale
McDonnell Douglas Realty Company
4060 Lakewood Boulevard, Sixth Floor
Long Beach, California 90808

Subject: Workscope and Cost Estimate - Phase II Environmental Site Assessment
McDonnell Douglas Realty
C-6 Douglas Aircraft Company Complex
Torrance, California
K/J 196023SC1

Dear Mr. Stavale:

Kennedy/Jenks Consultants (Kennedy/Jenks) is pleased to submit this workscope and cost estimate to McDonnell Douglas Realty Company (MDRC) to perform a Phase II Environmental Site Assessment (Phase II) at the C-6 facility based on the recommendations for further investigation in our correspondence dated 15 February 1996.

BACKGROUND

The C-6 facility is currently used as an industrial facility. In a draft Phase I Environmental Site Assessment dated 31 January 1996, Kennedy/Jenks developed conclusions about potential environmental interests in a portion of the facility labeled in the report as "Parcel A". In subsequent correspondence, Kennedy/Jenks forwarded recommendations for further investigation of those areas which may have experienced potential environmental impacts.

SCOPE OF WORK

Kennedy/Jenks is providing this cost estimate and brief workscope description to supplement our recommendations made in correspondence dated 15 February 1996. The objective of the recommended testing is to assess the potential for impacted soil to be present at potential source areas identified in the Phase I assessment. The investigation described herein is not designed to define the lateral or vertical extent of media impacted by chemicals of concern but only to determine if there has been an impact. Kennedy/Jenks will use hand auger, hollow-stem auger, and hydraulic-powered drive sampling techniques to collect samples from selected locations. The areas to be sampled are identified in the attached recommendations letter (15 February 1996). Per our conversation, investigation of underground pipelines is not included in the workscope at this time. Additionally, in the interest of schedule and due to access difficulties, we have selected 10 of the 15 machine pits in Building 37 for sampling as a representative test area. A summary table (Table 1) identifies each area and the planned sampling and analytical program.

Kennedy/Jenks Consultants

Mr. S. Mario Stavale
McDonnell Douglas Realty Company
21 February 1996
Page 2

Task 1 Workplans and Field Preparation

To accomplish the Phase II objectives and document proper protocol for the work, a summary workplan will be prepared prior to initiating field work. The major portion of the workplan will be comprised of identification of sampling locations, sampling methods and the Kennedy/Jenks Standard Operating Guides. The Guides incorporate industry professional standards for routine sampling, and are designed to meet general regulatory agency requirements and results in litigation quality work. The summary workplan will be compiled for use in the field and will include the recommendations, this workscope, and summary tables. The summary workplan objectives and sampling program will be reviewed with the field staff at project startup. A site health and safety plan will also be prepared prior to conducting field activities. The site health and safety plan will address any confined space entry issues that are presented by the need to sample in subsurface concrete vaults.

Task 2 Sampling and Analysis

Field activities will be initiated with selection of sampling locations, geophysical screening for certain underground obstructions, and coring of concrete paving to access subsurface soils.

Sampling will be accomplished using direct-push, hollow-stem auger, and hand-auger methods. The push technology uses a truck-mounted, hydraulically driven sampler or core barrel that allows penetration and standard drive sampling without the generation of drill cuttings. The method is quick and eliminates the bulk of residuals associated with auger drilling and will be used at as many locations as possible. A hollow-stem auger drill rig will be used to penetrate soils beneath machine pits in Building 37 which have been backfilled with soil. The drill rig will be equipped with a concrete bit to penetrate the concrete bottom of the pits. The remaining test holes will be advanced with a hand auger and sampled with a hand operated drive sampler.

At one of the deeper test locations, the soil types encountered will be logged using the Unified Soil Classification System (USCS). At other locations, the soil type of each sample will be recorded on sample collection logs.

The hand-auger holes will be backfilled with bentonite chips. Cuttings will be drummed and labeled. At each location, concrete or asphalt paving will be replaced to match the surrounding surface.

Samples will be collected in brass or stainless steel sleeves, as appropriate for the program analytes at each location. Sample volume and packaging requirements will be specified in the workplan tables. Each sample will be labeled, packaged, and placed in an ice-cooled insulated container upon collection pending transport to the analytical laboratory. Sample custody will be maintained by the field sampler and documented on standard chain-of-custody forms. At the end

Kennedy/Jenks Consultants

Mr. S. Mario Stavale
McDonnell Douglas Realty Company
21 February 1996
Page 3

of each field day, samples will be transported to the analytical laboratory by Kennedy/Jenks or laboratory personnel. Samples will be analyzed on a two-week turnaround basis by the analytical methods specified in the recommendations.

Task 3 Report Preparation

A draft report will be prepared for review which presents the findings of the investigation. The report will briefly summarize investigation methods and activities, referencing the workplan where appropriate, and conclusions based on the data gathered. The report will include maps showing test locations and tables summarizing sample data. Total Recoverable Petroleum Hydrocarbon (TRPH) data will be posted on maps as an indicator chemical for each area tested. Laboratory analytical reports and chain-of-custody records will be appended to the report. A final report will be prepared following review of the draft report by MDRC personnel and discussion of comments with Kennedy/Jenks.

Task 4 Project Management

Implementation of this project will be under the direct supervision of Mr. Rus Purcell. Mr. Purcell will schedule and direct technical activities, monitor project costs, and communicate important project related information to MDRC personnel. Project management will also include subcontracting and billing activities.

PROJECT SCHEDULE

Kennedy/Jenks is prepared to begin project activities upon receipt of authorization to proceed. Project activities will begin with subcontracting, scheduling, and workplan preparation. It is anticipated that field activities will begin within 5 days of authorization and are expected to be completed within 10 days. Laboratory analysis of samples on a standard turnaround time will take approximately two weeks. Based on the anticipated schedule for receipt of laboratory results, and a one-week report preparation time, a draft report is expected to be available for review within five weeks of authorization to proceed.

PROJECT COSTS

Work will be performed under the existing contract executed 28 December 1995. As specified in the contract, compensation for consulting services provided by Kennedy/Jenks will be on a time and expense basis in accordance with the Kennedy/Jenks Schedule of Charges dated 3 February 1995 (28 December 1995 Contract). On the basis of the proposed Scope of Services, we estimate a project budget of \$65,400. An itemized cost breakdown by task is presented in Table 2. To authorize the above workscope, please sign this agreement in duplicate and return one original to our office.

Kennedy/Jenks Consultants

Mr. S. Mario Stavale
McDonnell Douglas Realty Company
21 February 1996
Page 4

Kennedy/Jenks appreciates the opportunity to provide this estimate for Phase II environmental services and looks forward to working with you on this phase of your project. If you have any questions regarding the workscope or estimated cost, please call us at (714) 261-1577.

Very truly yours,

AUTHORIZATION:

KENNEDY/JENKS CONSULTANTS

MCDONNELL DOUGLAS REALTY COMPANY

for 
C. Rus Purcell, R.G.
Project Manager

CRP/ca

By: _____

Title: _____

Date: _____

TABLE 2
PROPOSAL FOR PHASE II ASSESSMENT
C-6 FACILITY, TORRANCE, CALIFORNIA
MC DONNELL DOUGLAS REALTY COMPANY
KJ Proposal No. 196023SQ

TASK	Senior Eng/Sci \$135	Sr Assoc Eng/Sci \$120	Assoc Scientist \$110	Staff Eng/Sci \$95	Draft Tech \$59	Word Proc \$47	Total Hours	Other Direct Costs	Total Cost
TASK 1 - Workplans/Field Preparation									
Health and Safety Plan		1		8	1	1	11		\$908
Sample Location Selection		1		8	2		11		\$918
Work Plan		8		16	2	1	27		\$2,486
Equipment Preparation				8	4		12		\$916
Subtotal Hours	0	10	0	40	9	2	61	\$0	\$5,226
TASK 2 - Sampling									
Geophysical Clearance				8			8	\$874	\$1,554
Concrete Coring				10			10	\$1,725	\$2,575
Drilling			10				10	\$3,075	\$4,175
Geoprobe Sampling			30				30	\$5,750	\$8,050
Hand Auger Sampling					48		48	\$1,000	\$3,832
Analytical Lab Fees							0	\$23,750	\$23,750
Backfilling and Resurfacing					10		10	\$100	\$690
Subtotal Hours	0	0	40	18	59	0	116	\$41,274	\$50,626
TASK 3 - Report Preparation									
Draft		8	8	40	16	12	84	\$200	\$6,004
Final		4		12	4	4	24	\$100	\$2,024
Subtotal Hours	0	12	8	52	20	16	108	\$300	\$8,028
TASK 4 - Project Management									
Client Liaison, Subcontractor Mgmt., Etc.		10		16			26		\$2,560
Subtotal Hours	0	10	0	16	0	0	26	\$0	\$2,560
TASK 5 -									
Subtotal Hours	0	0	0	0	0	0	0	\$0	\$0
TASK 6 -									
Subtotal Hours	0	0	0	0	0	0	0	\$0	\$0
TOTALS	0	32	48	126	87	18	311	\$41,574	\$66,439

TABLE 1
SAMPLING PROGRAM
PHASE II ASSESSMENT
C-6 FACILITY, TORRANCE, CALIFORNIA

MCDONNELL DOUGLAS REALTY COMPANY
K/J 198023SCI

TEST AREAS	NUMBER OF TEST LOCATIONS	APPROXIMATE DEPTH OF TEST Ft Below Grade	TEST METHODS
1 Former clarifiers behind Bldg. 34	1	15	Geoprobe
2 Clarifiers near the chip compactor	2	15	Geoprobe
3 Machine Pits	14	5 to 20	Geoprobe, HSA, Hand Auger
4 Solvent Tank	1	12	Hand Auger
5 Elevator Pits	2	10	Hand Auger
6 Former sump/UST	1	15	Geoprobe
7 Process Tanks	1	10	Hand Auger
8 Clarifier/ NE 67	1	20	Geoprobe
9 EDM Machine Pit	1	10	Hand Auger
10 Dark Room	2	5	Hand Auger
11 Drains - Comp. Rm.	2	5	Geoprobe
12 Former Xfer Station	2	15	Geoprobe
Totals	30		